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EXAMINER

WOZNIAK, JAMES S

ART UNIT PAPER NUMBER

2655

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/846,200

Applicant(s)

CIURPITA ET AL.

Examiner

James S. Wozniak

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action, filed on 9/19/2005, is persuasive with respect to claims 7-8 and 22-23 (*Amendment, page 10*) and, therefore, the finality of that action is withdrawn. Thus, a new final rejection is issued to provide a statutory rejection of Gerson et al (*U.S. Patent: 4,870,686*) in view of Ammicht et al (*U.S. Patent: 6,246,986*) and further in view of Vanbuskirk (*U.S. Patent: 6,505,155*) with respect to the applicants' challenge of the official notice taken with respect to claims 7-8 and 22-23 in the response from 4/29/2005.

### *Response to Arguments*

2. Applicant's arguments have been fully considered but they are not persuasive for the following reasons:

With respect to **Claim 1**, the applicant argues that Ammicht et al (*U.S. Patent: 6,246,986*) fails to teach that a recognition result that is interrupted by a user prior to being fed back for verification (*Amendment, Pages 6-7*), however, the examiner points out such a limitation is taught by the combination of Ammicht and Gerson et al (*U.S. Patent: 4,870,686*). Specifically, Gerson teaches a synthesized speech recognition result audio output that is issued through a speaker when a pause is detected in a numerical sequence spoken by a user (*Col. 7*,

*Lines 27-56; and Col. 5, Lines 20-24*). Gerson does not specifically teach the ability to interrupt the synthesized speech recognition audio result before it is fully fed back for verification, however Ammicht teaches a barge-in feature that allows a user to interrupt an *audio output* anytime before it is fully fed back to a user (*Col. 3, Lines 35-45; and Col. 5, Lines 20-35*). Thus, when combined with Gerson, the barge-in feature taught by Ammicht would allow a user to interrupt an audio output, which in the case of Gerson is the synthesized audio output of a speech recognition result, before it is fully fed back to a user. Thus, the combined teachings of Gerson in view of Ammicht provide a recognition result that is interrupted by a user prior to being fed back for verification.

In response to the applicant's argument that there is no motivation to combine the references (*Amendment, pages 7-8*), the examiner points out that such motivation is found in the Ammicht reference as noted in the previous office action (*Page 4*), which notes the benefit of using a barge- in feature as helping facilitate user-machine interactions by allowing a user to interrupt an audio prompt with meaningful speech at any time (*Col. 2, Lines 19-29; and Col. 3, Lines 35-45*).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning (*Amendment, Page 8*), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Thus, for the above noted reasons, claim 1 remains rejected.

With respect to **Claim 13**, see the response to arguments directed towards claim 1.

In light of the applicant's arguments directed towards claims 7-8 and 22-23, the examiner has provided a statutory rejection below of Gerson et al (*U.S. Patent: 4,870,686*) in view of Ammicht et al (*U.S. Patent: 6,246,986*) and further in view of Vanbuskirk (*U.S. Patent: 6,505,155*) with respect to the applicants' challenge of the official notice taken with respect to claims 7-8 and 22-23 in the response from 4/29/2005.

The remaining dependent claims are argued as further limiting currently rejected independent claims (*Amendment, pages 9-10*), and thus, also remain rejected.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-5, 10-15, 18, 20-21, and 25-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerson et al (*U.S. Patent: 4,870,686*) in view of Ammicht et al (*U.S. Patent: 6,246,986*).

With respect to **Claims 1 and 13**, Gerson discloses:

Receiving at least a current subgroup of speech units that form part of a complete speech sequence that is to be input from a user, the complete speech sequence being embodied as at least

one of a word and a password comprised of a plurality of alphanumeric characters, the subgroup being one or more alphanumeric characters of the complete speech sequence (*partial digit sequence of a complete keyword, Col. 7, Lines 16-25 and abstract*);

Detecting a natural pause between input subgroups such that a pause between two alphanumeric characters in a given subgroup or a pause between one alphanumeric character and a subgroup are detected (*pause detection, Col. 7, Lines 16-68*);

Recognizing the speech units of the subgroup to provide a recognition result (*recognizing speech and displaying and synthesizing the result after a pause, Col. 7, Lines 38-56*); and  
Immediately feeding back the recognition result for verification by the user (*display and synthesis of a recognition result after a detected pause, Col. 7, Lines 27-56*).

Although Gerson teaches a method of digit keyword recognition and pause detection for recognition feedback, Gerson does not teach the use of a barge-in feature that allows a user to interrupt a recognition result before it is completely fed back to the user, however Ammicht teaches such a barge-in feature (*Col. 3, Lines 35-45; and Col. 5, Lines 20-35*).

Gerson and Ammicht are analogous art because they are from a similar field of endeavor in speech recognition systems capable of recognizing spoken digits. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Gerson with the “barge-in” feature taught by Ammicht in order to help facilitate user-machine interactions by allowing a user to interrupt a prompt with a meaningful speech input at any time (*Col. 2, Lines 19-29; Col. 3, Lines 35-45*).

With respect to **Claims 2 and 14**, Gerson discloses:

A speech recognition method and system, wherein said user is only prompted to repeat said subgroup for re-recognition and re-verification if a rejection criteria is met (*repeat prompt if no keyword is recognized, Col. 7, Lines 16-25, and a confirmation to indicate that an input has been cleared and further speech can be input upon the utterance of a "clear" command, Col. 7, Lines 27-56*).

With respect to **Claims 3 and 20**, Gerson recites:

Repeating the steps of Claim 1 for remaining input subgroups until it is determined that the complete speech sequence has been recognized (*repeating the recognition of partial digit strings until the utterance of a terminate command, Col. 7, Lines 56-68*).

With respect to **Claims 4 and 21**, Gerson recites:

A speech recognition method and system, wherein the last step of Claim 1 is affected using pre-recorded prompts or via text-to-speech synthesis, (TTS) to feedback the recognition result (*synthesized recognition results, Col. 7, Lines 27-68*).

With respect to **Claims 5 and 18**, Gerson discloses:

The rejection criterion is embodied as a negative utterance spoken by the user after receiving the feedback recognition result (*"clear" command word that negates an undesired recognition result, Col. 7, Lines 27-56*).

With respect to **Claims 10 and 25**, Gerson discloses:

The speech units are selected from any of spoken digits and spoken letters (*spoken digits, Col. 7, Lines 16-25*).

With respect to **Claims 11 and 26**, Gerson recites:

A speech recognition method and system, wherein input of a next subgroup after receiving the fed back recognition result indicates a correct recognition of the currently input subgroup (*Col. 7, Lines 27-56*).

With respect to **Claims 12 and 27**, Gerson recites:

The speech recognition unit determines a confidence level for the recognition result (*distance metric for determining a most likely template match, Col. 4, Lines 38-51*).

With respect to **Claim 15**, Gerson discloses:

A speech recognition system, wherein the speech recognition unit compares the input subgroup with stored recognition grammar in order to determine the recognition result (*speech recognizer having a digit template, Col. 4, Lines 38, and Col. 7, Lines 16-68*).

5. **Claims 6, 17, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerson et al in view of Ammicht et al, and further in view of Hou et al (*U.S. Patent: 5,325,421*).

With respect to **Claims 6, 17, and 19**, Gerson in view of Ammicht teaches the speech recognition system capable of detecting pauses between digit segments and prompting a user to repeat a subgroup if a digit is not recognized, as applied to Claim 2. Gerson in view of Ammicht does not teach the ability to include a negating speech input in a spoken digit string, however, Hou discloses such a means (*cancel command immediately following a digit sequence, Col. 10, Lines 42-58*).

Gerson, Ammicht, and Hou are analogous art because they are from a similar field of endeavor in speech-controlled interfaces. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Gerson in view of



Ammicht with the ability to include a negating speech input in a spoken digit string as taught by Hou in order to provide a means for a user to delete an incorrect speech input while entering a digit string (*Hou, Col. 10, Lines 47-51*), thus implementing a more efficient digit recognition processing by bypassing the partial digit string verification step as taught by Gerson and applied to Claim 1.

6. **Claims 7-8 and 22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerson et al (*U.S. Patent: 4,870,686*) in view of Ammicht et al (*U.S. Patent: 6,246,986*) and further in view of Vanbuskirk (*U.S. Patent: 6,505,155*).

With respect to **Claims 7-8 and 22-23**, Gerson in view of Ammicht teaches the speech recognition method and system capable of recognizing digit segments through pause detection means to enable, upon input of a “clear” command, correction of input and recognition errors, as applied to Claims 2 and 14. Gerson in view of Ammicht does not specifically suggest prompting a user to input shorter speech segments upon repeated recognition errors as a training mechanism, however Vanbuskirk teaches a method for providing prompts suggesting the use of shorter speech utterances (commands) in response to poor recognition accuracy, which effectively allows the user to learn the most accurate utterances by providing a list of the high recognition (shorter) speech segments (*Col. 8, Lines 40-54*).

Gerson Ammicht, and Vanbuskirk are analogous art because they are in a similar field of endeavor in speech-controlled interfaces. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to combine the teachings of Gerson in view of Ammicht with the method for providing prompts suggesting the use of shorter speech utterances

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as taught by Vanbuskirk in order to provide more accurate speech recognition and lowered likelihood of a recognition error (*Vanbuskirk, Col 8, Lines 40-54*).

7. **Claims 9 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerson et al in view of Ammicht et al, and further in view of Larsen (*"Investigating a Mixed-Initiative Dialogue Management Strategy," 1997*).

With respect to **Claims 9 and 24**, Gerson in view of Ammicht teaches the speech recognition system capable of detecting pauses between digit segments and prompting a user to repeat a subgroup if a digit is not recognized, as applied to Claim 2. Gerson in view of Ammicht does not teach the ability to enter speech units using a dial pad upon repeated recognition errors, however Larsen discloses:

A speech recognition method and system, wherein if said rejection criteria are met repeatedly, the user is prompted to use a dial pad to enter the speech units (*ability to switch to DTMF input mode upon repeated recognition errors, Page 66-67, Application*).

Gerson, Ammicht, and Larsen are analogous art because they are from a similar field of endeavor in speech-controlled interfaces. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Gerson in view of Ammicht with the ability to enter speech units in a DTMF input mode upon repeated recognition errors as taught by Larsen to offer an alternative means of inputting information in a speech interface if a user becomes frustrated with repeated recognition errors.

8. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerson et al in view of Ammicht et al, and further in view of Ladd et al (*U.S. Patent: 6,269,336*).

With respect to **Claim 16**, Gerson teaches the speech recognition system capable of detecting pauses between digit segments and featuring a digit grammar for recognition, as applied to Claim 15. Gerson does not suggest that the recognition grammar is stored in a remote memory accessible by the speech recognition unit, however Ladd teaches such a configuration (*grammar database at a server, Col. 8, Lines 55-61*).

Gerson, Ammicht, and Larsen are analogous art because they are from a similar field of endeavor in speech recognition. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Gerson view of Ammicht with a recognition grammar stored at a remote server database as taught by Ladd in order to provide a well-known means of conserving system memory in a device with limited storage.

### *Conclusion*

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Bernardi et al (*U.S. Patent: 5,546,145*)- teaches a method that allows a user to interrupt a speech recognition result in order to voice a different word.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak  
9/27/2005



W. R. YOUNG  
PRIMARY EXAMINER